



Recent LAI PD VSM Research

Presented By
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MIT/LAI
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Overview

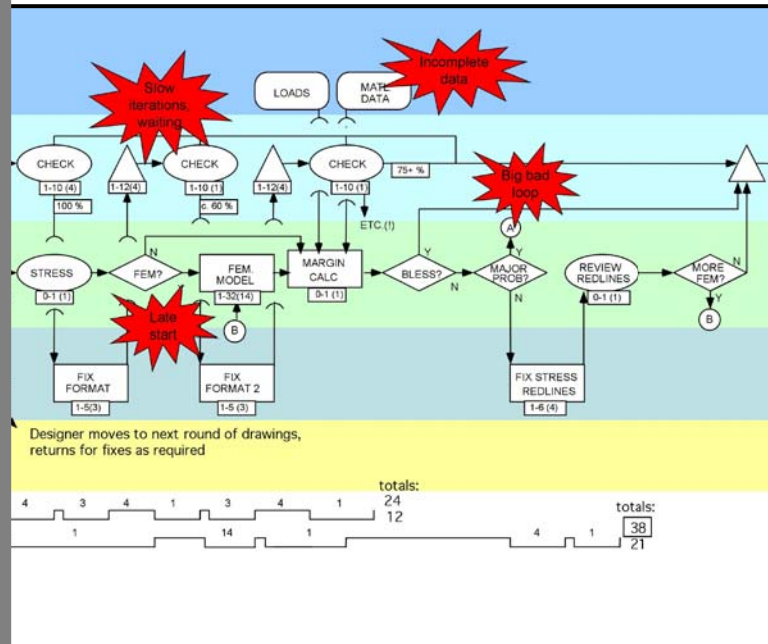
- **LAI PDVSM 1.0 released**
 - Predecessors in widespread (?) distribution and use (??) in the LAI consortium
- **Several recent research projects completed using value stream mapping in PD**
 - Kato—Waste in PD
 - Whitaker—VSM and EVMS
 - MacKenzie—VSM in USAF SPOs
- **Evidence of significant PDVSM activities among LAI consortium members**
- **Where do we stand as a learning community?**
 - What are the next steps?



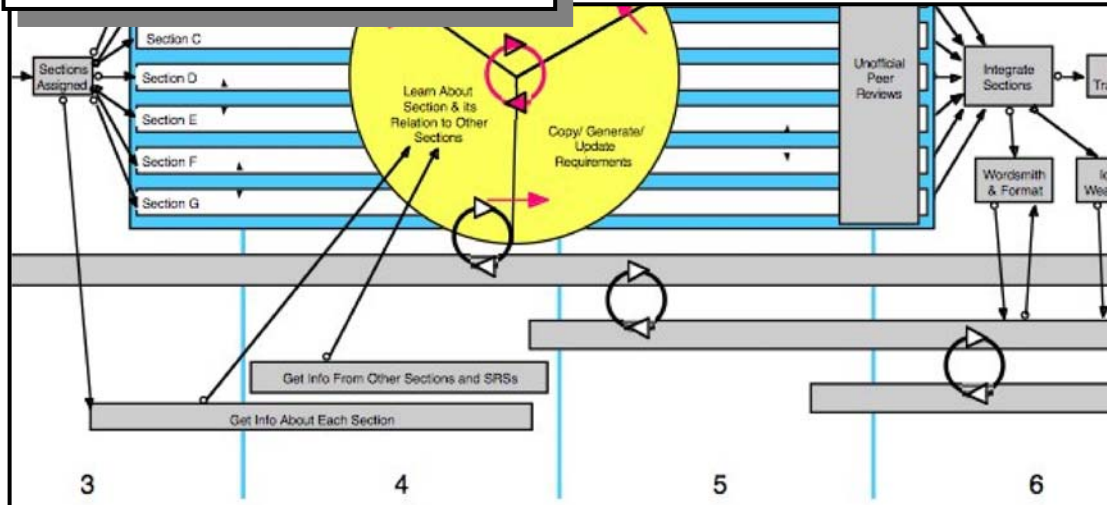
Product Development Value Stream Mapping (PDVSM)

Product Development Value Stream Mapping (PDVSM) Manual

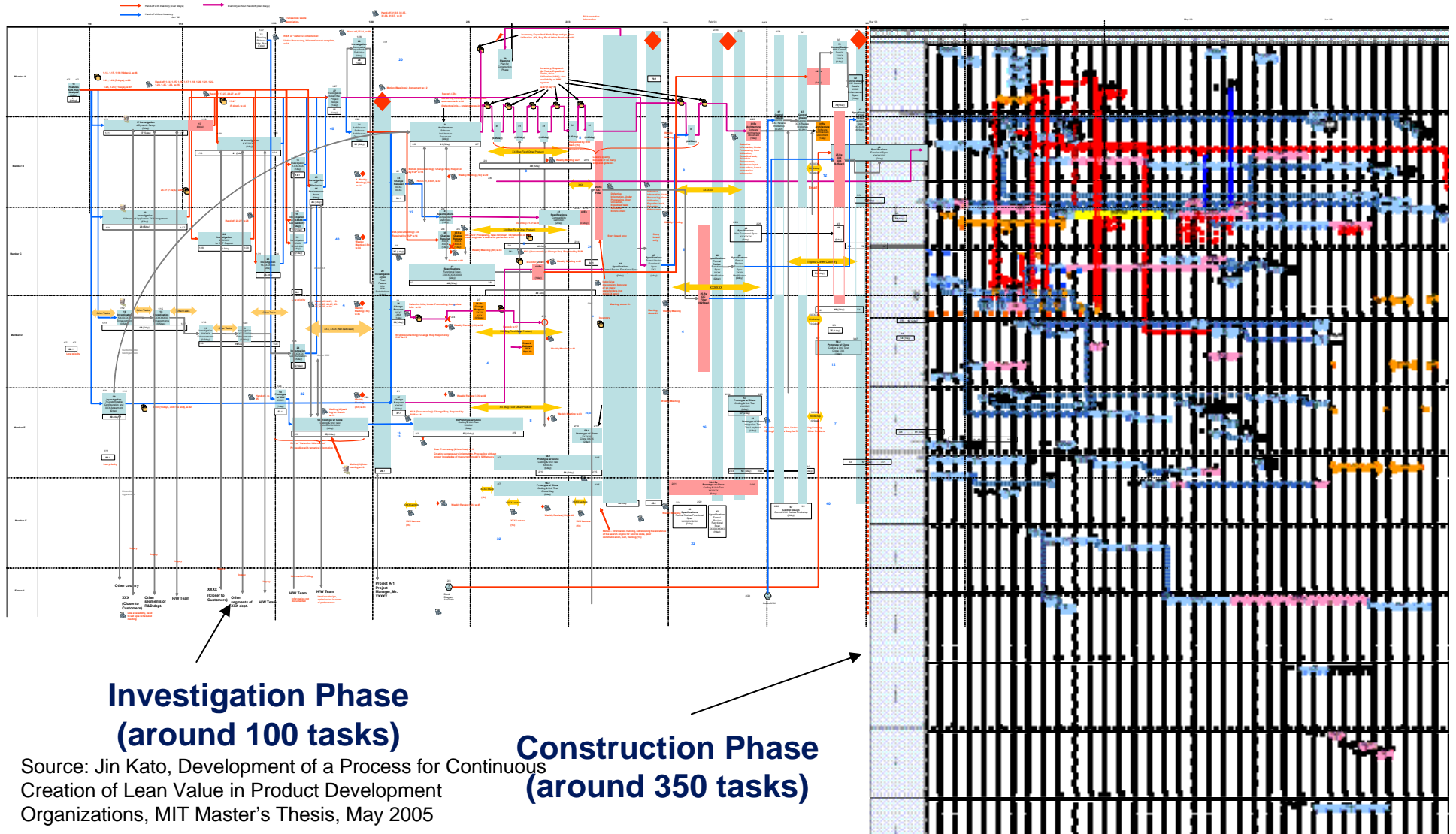
Hugh L. McManus, PhD



Tactical guide to applying value stream mapping techniques to PD, engineering, and other “off-the floor” processes



Embedded Software Development VSM

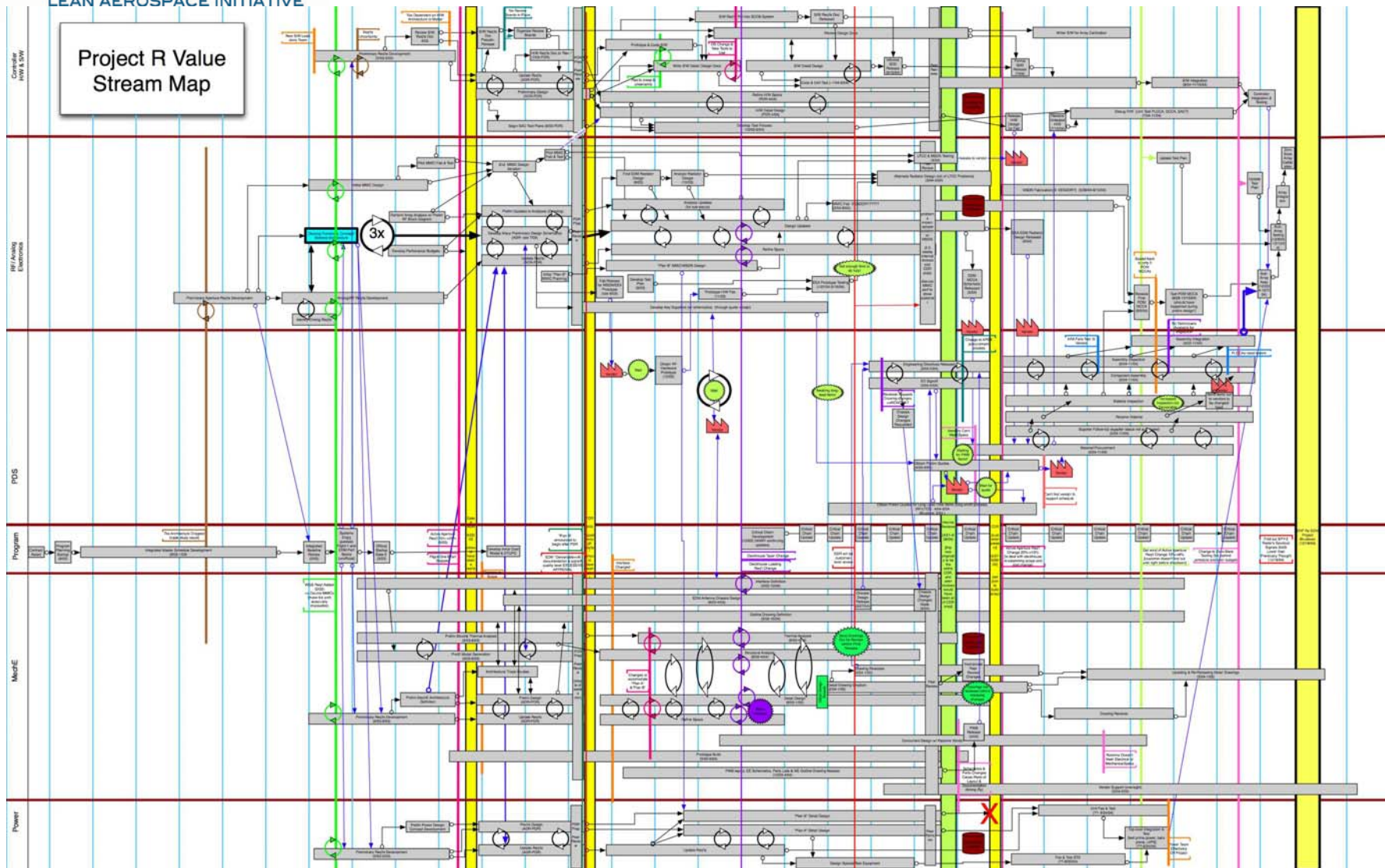




Hardware/Software Development Program VSM (Part of Major System)

LEAN AEROSPACE INITIATIVE

Project R Value Stream Map



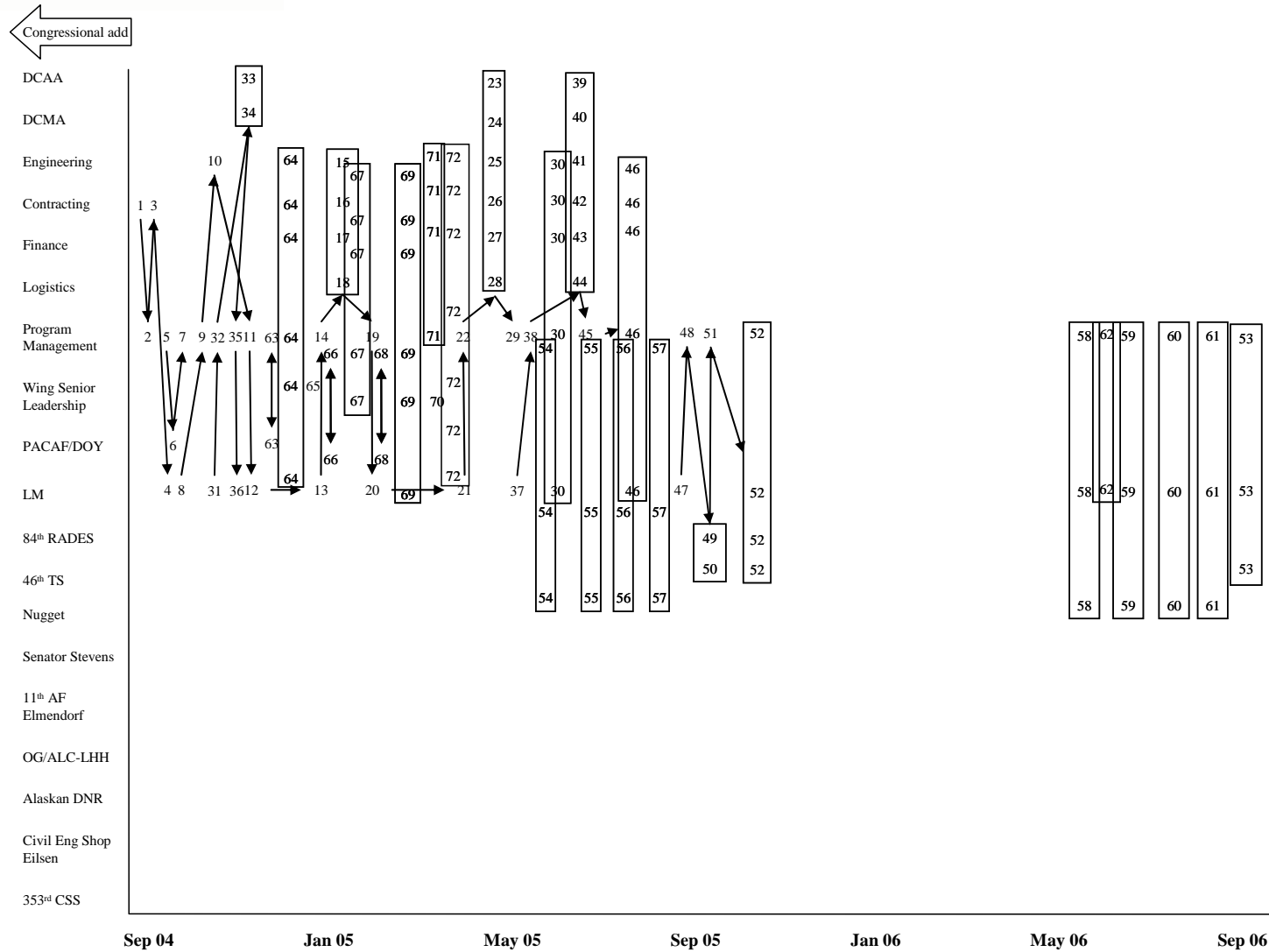
<http://lean.mit.edu>

Source: Ryan Whitaker, Using PDVSM to Better Characterize Waste and Value in Product Development, MIT Master's Thesis, August 2005

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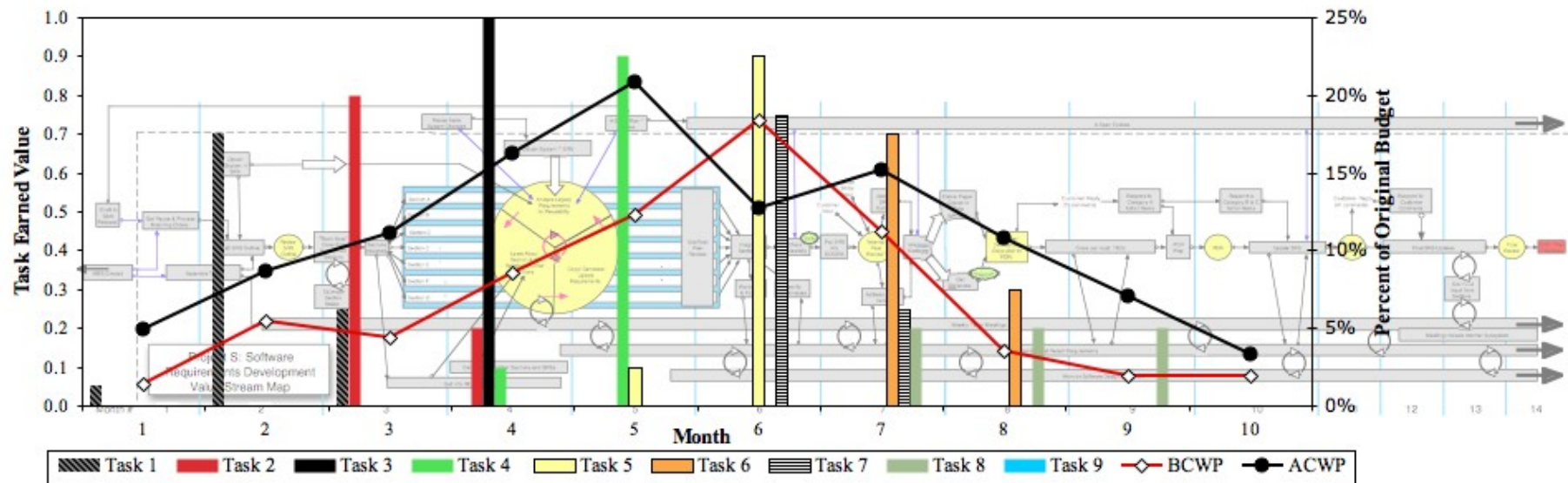


Small USAF Acquisition Program VSM



Value Measurement

- **Earned Value Management System (EVMS) commonly used to measure and manage PD, but can suffer from lack of tight linkages to actual value-creating activities in PD**
- **Initial research shows compatibility between value stream thinking in PD and EVMS, but little current convergence**



Source: Ryan Whitaker, Using PDVSM to Better Characterize Waste and Value in Product Development, MIT Master's Thesis, August 2005



Observations About the Current State of the Research

- **We are pushing the limits of traditional VSM tools to represent complex projects**
 - **Forced by limitations of existing methods to create VSMS at the level of local activities**
 - **VSMS of more complex activities resemble Gantt charts— inexact measures of value creation processes and the state of the processes that are producing the product**
- **Working premise is that uncertainty reduction activities are a surrogate for value creation progress in PD**
 - **Existing measures (EVMS) used for PD management can distract from true levels of uncertainty in development effort**
 - **Mismatch between level of measurement (EVMS elements) and work processes suggest limited potential impact of measurement system on actual behavior**
- **Existing management tools at program level could be improved to provide additional insight into state of the process, and flow of value through the system**